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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,474	12/28/2000	Gunther Lehmann	00P0113 US	3514

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EXAMINER

LOKE, STEVEN HO YIN

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,474

Applicant(s)

LEHMANN ET AL.

Examiner

Steven Loke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 2-5, 11-15 and 21-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-9, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 10 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/28/00, 8/16/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

1. Applicant's election without traverse of claims 1, 6-10 and 16-20 in the reply filed on 10/21/04 is acknowledged.
2. Claims 2-5, 11-15 and 21-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/21/04.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
4. Claims 8, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8, lines 4-5, the phrase "a gate oxide electrode" is unclear whether it is being referred to "a gate electrode".

Fig. 16 discloses only one fuse activation circuit means [170'] is used for simultaneously applying and controlling a selective blow voltage for fusibly blowing both lower antifuse and upper antifuse. It is unclear why claim 19, the child claim of claim 16, discloses a lower fuse activation circuit and an upper fuse activation circuit are used for fusibly blowing both lower antifuse and upper antifuse.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 6, 7, and 9 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Knall et al. (in the IDS filed on 8/16/04) (fig. 3 of Knall et al. has an effective filing date on 4/28/00).

In regards to claim 1, Knall et al. show all the elements of the claimed invention in fig. 3. It is an apparatus, comprising: a semiconductor body [47] having on a surface thereof at least one lower antifuse [51] and at least one upper antifuse [56] in vertically stacked relation with both such antifuses sharing a common intermediate electrode [54] therebetween; the lower antifuse [51] having a lower counter electrode [46] and a lower fusible insulator portion [51] defining a lower fuse element of an initial high electrical resistance state interconnecting the lower counter electrode [46] with the common intermediate electrode [54]; and the upper antifuse having an upper counter electrode [63] and an upper fusible insulator portion [56] defining an upper fuse element of an initial high electrical resistance state interconnecting the upper counter electrode [63] with the common intermediate electrode [54]; the upper and lower antifuses being arranged to permit their respective selective energizing for corresponding separate activation to a final low electrical resistance state.

In regards to claim 6, Knall et al. further disclose the counter electrode [46] of at least one of the antifuses is interconnected by the corresponding fuse element [51] to the

common intermediate electrode [54] through at least one electrode extension portion [52] interposed between said fuse element [51] and the common intermediate electrode [54].

In regards to claim 7, Knall et al. further disclose the counter electrode [46] of at least one of the antifuses is interconnected by the corresponding fuse element [51] to the common intermediate electrode [54] through at least one electrode extension portion [47] interposed between said fuse element [51] and the corresponding counter electrode [46].

In regards to claim 9, Knall et al. further disclose the upper antifuse is in the form of a contact antifuse having an electrode extension portion [62] defining a conductive contact interposed between the upper counter electrode [63] and the upper fusible insulator portion [56] defining the upper fuse element and interconnecting the upper counter electrode [63] with the upper fuse element [56], the upper fuse element [56] also being interconnected with the common intermediate electrode [54].

7. Claims 10 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The first major difference in the claims not found in the prior art of record is the

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lower antifuse is in the form of a gate oxide antifuse having a source region and a drain region. The second major difference in the claims not found in the prior art of record is the upper fuse element is directly interconnected with the common intermediate electrode. The third major difference in the claims not found in the prior art of record is the energizable fuse activation circuit means defining a lower fuse activation circuit and an upper fuse activation circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (571) 272-1657. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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January 9, 2005

Steven Loke
Primary Examiner

